CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	State 16-33 Oil Well
Proposed Implementation Date:	Q1 2022
Proponent:	Baldwin Lynch Energy 1001A E Harmony Rd #368 Fort Collins, CO 80525
Location:	Section 16-T9S-R22E (Common Schools Trust)
County:	Carbon

I. TYPE AND PURPOSE OF ACTION

Baldwin Lynch Energy has requested permission to drill a new Lakota Wildcat well in Sec. 16 T9S-R22E. A well pad and access road would be constructed to drill and maintain the well. This document will review the drilling and completion of the well along with effects to the surface. The well's APD shows it would be drilled to a vertical depth of approximately 8900 feet TVD and would produce out of the Lakota formation. If the well is economically viable, pertinent production equipment will be installed downhole and on the surface.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

Baldwin Lynch Energy applied for a permit to drill an oil well on State Trust Lands through the Montana Board of Oil and Gas. Baldwin Lynch Energy leases the right to develop the oil and gas minerals within the proposed section. Ben Jones, Petroleum Engineer for the Board of Oil and Gas approved the APD on October 19, 2021. The document was then sent to Zack Winfield, Petroleum Engineer, Minerals Management Bureau – Trust Lands, for review. An authorization letter from the Minerals Management Bureau would need to be received by the proponent prior to drilling activities. The Southern Land Office of the TLMD and the surface lessee for the tract have been notified of the company's intent to drill the well. Surface damage settlements would be negotiated between Baldwin Lynch Energy and the surface lessee. Baldwin Lynch Energy has obtained consultation through the Montana Sage Grouse Habitat Conservation program. They have already paid the debits through the program, for this project.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Balwin Lynch Energy has submitted Permit Form 22 to the Montana Board of Oil and Gas Conservation to drill the State 16-33 well.

Carbon County requires a conditional use permit for oil and gas development. The permit can be acquired from their website and submitted to the county for review.

3. ALTERNATIVES CONSIDERED:

No Action Alternative: The application for permit to drill the State 16-33 well would not be authorized and a well would not be drilled.

Action Alternative: Baldwin Lynch Energy, would obtain authorization to construct an access road, build a well pad, and drill a Lakota formation well on State Trust Lands.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

The geology in section 16 is comprised of one main member. The Fort Union Formation, Tongue River Member is described as Yellowish orange sandstone, sandy and silty carbonaceous shale, and coal. Alluvial plain. Thickness as much as 300 m (984 ft)

The soils in section 16 that will be affected by the building of the road are comprised of the Travessilla Complex and a sandstone outcrop. Neither of these members are rated for compatibility, suitability for roads or erosion hazards through the USGS database. Nearby soils contained within the NW4NW4 of section 16 have slight to moderate ratings for soil compatibility, suitability for roads, and erosion hazards.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Wills Ditch runs through the NW4NW4 of section 16 for approximately 700 feet.

The well would be drilled in two primary stages. The first stage is the surface portion, while the secondary stage is the intermediate interval or the production portion. The surface hole would be drilled with a 12.25" bit and would use a freshwater gel mud to protect fresh-water aquifers. Lost circulation is expected during the drilling of porous formations such as loose gravel or coal seams. This has occurred in nearby wells. To mitigate lost circulation, the crew would add lost circulation material to the mud, which thickens the fluid and helps to prevent losses. The surface hole would be drilled to 900' MD and would be cased and cemented back to surface. The remaining wellbore would be drilled with a 7.875" bit and cased with 5.5" production casing which would be cemented as well.

A temporary pit would be constructed to store drilling fluids and cuttings. Upon completion of the well, the pit would be reclaimed, and become part of the well pad. The size of the pad would also be reduced if the well is successful.

There are no freshwater wells according to Montana's GWIC database contained within section 16.

Water for drilling would be purchased from local irrigation water sources and water for cementing would be purchased from Belfry or Bridger City water supply.

Water used for the drilling of the well would have minimal impacts to the abundance of water in the area.

There are no anticipated effects to the ground water or surface water quality in the area.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

A short duration increase in airborne pollutants and particulates would occur from machinery exhaust and dust during proposed well pad construction and drilling activities. Minimal short-term impacts to air quality are expected. If commercial quantities of hydrocarbons are found, associated natural gas may likely be produced along with the oil. Depending on proximity of gas lines, natural gas flaring is allowed on a temporary basis as is permitted by the Board of Oil and Gas Conservation. The products of natural gas flaring are carbon dioxide and water.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Vegetation in Section 16 consists of the following: western wheatgrass, bluebunch wheatgrass, sedge, crested wheatgrass, fringed sagewort, prickley pear, broom snakeweed, big sagebrush, cheatgrass.

Surface damages would occur at the site of the well pad and the corresponding access road. Upon abandonment of the well, Baldwin Lynch Energy would be expected to reclaim the surface disturbance using stocked topsoil and a seeding mixture approved by the DNRC's Southern Land Office.

Surface damage compensation would be negotiated between the operator and the surface lessee.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Disruption to wildlife would occur during the life of the well. The construction of the well pad, and access road along with the drilling of the well, would create temporary disruptions to the species inhabiting the area. If the well is economic, a portion of the pad would be reclaimed and there would be trucks going to and from the well for maintenance. If the well is non-economic, the pad and access road would be reclaimed completely. The scope of this project would not change enough area to permanently effect the wildlife.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

A search was conducted using the Montana Natural Heritage Program database to identify point observations of species of concern in the section of the proposed activity. There were no point species of concern documented in Section 16 in the last 10 years.

Section 16 is contained within general sage grouse habitat. The proponent has consulted the Montana Sage Grouse Habitat Conservation Program. They have paid the debits and have received authorization to move forward with the project from the program.

The project is contained within the Greater Yellowstone Ecosystem. This Ecosystem contains grizzly bears which are a threatened species according to the federal government. This project would not significantly change the Greater Yellowstone Ecosystem and would have miniscule affects on the grizzly population held within the ecosystem.

The project is also contained within a buffer area for Townsend's Big-eared bat, a species of concern. Lights and noise from the drilling rig may have adverse effects on the bats temporarily, however there are no long-term negative effects anticipated.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

A Class III cultural and paleontological resources inventory was conducted of this project's area of potential effect (APE) in 2008 for a seismic project. Despite a detailed examination, no cultural or fossil resources were identified in APE. No additional archaeological or paleontological investigative work is recommended. The proposed project will have *No Effec*t to *Antiquities* as defined under the Montana State Antiquities Act. A formal report of findings from the 2008 inventory work is on file with the DNRC and the Montana State Historic Preservation Officer.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Impacts to aesthetics would be minimal during the scope of this project. The drilling rig may be visible from MT HWY 72 during the construction of the well pad and drilling of the well. After drilling activities are completed, aesthetics would only be changed within the surface area of the well pad and access road. Depending upon the production success of the proposed well, traffic to and from the well may increase for the maintenance and operation of the well.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

There are other oil and gas wells within the general vicinity of the proposed project. Oil in its nature in non-renewable and a limited resource, however the utilization of that resource may only be achieved by extraction. Nearby wells could potentially see an affect from the drilling of this well, however this effect is expected to be minimal, and is mitigated by spacing orders issued by the MT BOGC.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

If Baldwin Lynch Energy were to drill a successful well, other wells in section 16 and neighboring lands may be proposed to utilize and develop an oil resource.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

No human and health safety risks were identified because of the proposed project other than the typical occupational hazards that coincide with drilling and production operations.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

The proposed project would temporarily alter grazing activities where the well pad is constructed. The pad is approximately 300 feet by 200 feet. This ground would not be utilized for grazing production until it is reclaimed. The surface lessee of the tract would be properly compensated through the State's surface damages agreement.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

The proposed project has the potential to create jobs based upon the success of the well.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No significant impact from a single well. However, if multiple wells are successful in the area, the local tax revenue could increase.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services.

No significant impact.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

No known zoning or management plans exist for this area.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

The public hunts for big game and bird species on this tract. However, the construction of the road and well pad, along with the drilling of the well should not hinder the ability to hunt the tract.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

No impact.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

No impact.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

No impact.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The existing oil and gas lease provides approximately $960 in rental fees, annually. If the well is drilled and proves to be economic, the revenue generated from this tract will increase. A production royalty rate of 16.67% will be paid for all oil and gas produced from the well. This would generate significant revenue to the trust and would create a sustainable source of income for the life of the well, if successful.

EA Checklist Prepared By:	Name: Zackary Winfield	Date: 11/24/21
	Title: Petroleum Engineer	

V. FINDING

25. ALTERNATIVE SELECTED:

After reviewing the Environmental Assessment, I have selected the Action Alternative, to authorize the proponent's APD. I believe this alternative can be implemented in a manner that is consistent with the long-term sustainable natural resource management of the area and generate revenue for the common school trust.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Wildlife in the area may be affected in the short and long term from increased activity and habitat alteration. The scope of the project is small enough that any wildlife species will be able to adapt and move to nearby areas where they will be less exposed to the impacts of the project.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

EA Checklist Approved By:	Name: Trevor Taylor	
	Title: MMB Bureau Chief	
Signature: Trevor E Taylor		Date: 11/24/21

Map showing the approximate location of the well pad.